

Troutman St. Venturi Flow Chamber Upland Site Summary

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SITE NAME: TROUTMAN ST VENTURI FLOW CHAMBER

Address: NE corner of Troutman Street & Irving Avenue,
Brooklyn

Tax Lot Parcel(s): NA

Latitude: 40.704815

Longitude: -73.924707

Regulatory Programs/Numbers/Codes: NYS DEC Spill #05-12607, EPA RCRA ID #NYR000134684

Analytical Data Status: ☐ Electronic Data Available ☒ Hardcopies only ☐ No Data Available

1 SUMMARY OF CONSTITUENTS OF POTENTIAL CONCERN (COPCS) TRANSPORT PATHWAYS TO THE CREEK

Overland Transport

This pathway is not present, as the site is not adjacent to the waterway.

Bank Erosion

This pathway is not present, as the site is not adjacent to the waterway.

Groundwater

The underground chamber was designed to drain any accumulated water directly into the soils below. This would include any water draining off equipment or stormwater entering through the chamber hatches. Groundwater was not encountered during remediation of the soils. There is insufficient information to determine whether overland transport is a historic or current pathway.

Overwater Activities

The site is not adjacent to Newtown Creek and associated waterways and therefore, has no overwater activities. This pathway is not present.

Stormwater/Wastewater Systems

This pathway is not present, as the facility was a below grade-chamber with no runoff or wastewater systems.

Air Releases

Information related to air discharges was not located for this site. As this is an underground chamber, this pathway appears to be incomplete.

2 PROJECT STATUS

Activity		Date(s)/Comments
Phase 1 Environmental Site Assessment	<input type="checkbox"/>	
Site Characterization	<input type="checkbox"/>	
Remedial Investigation	<input type="checkbox"/>	
Remedy Selection	<input type="checkbox"/>	
Remedial Design/Remedial Action Implementation	x	January 31, 2006 – date elemental mercury was encountered and immediate remedial action was taken
Use Restrictions (Environmental Easements or Institutional Controls)	<input type="checkbox"/>	
Construction Completion	<input type="checkbox"/>	
Site Closeout/No Further Action Determination	x	June 28, 2006

- **NYSDEC Site Code(s):** NYS DEC Spill #05-12607, EPA RCRA ID # NYR000134684
- **NYSDEC Site Mgr:** Hiralkumar Patel – Region 2 Environmental Remediation Division

3 SITE OWNERSHIP HISTORY

- **Respondent Member:** x Yes ☐ No

Owner	Occupant	Type of Operation	Years
NYC Dept of Environmental Protection	NYC Dept of Environmental Protection	Water Main Monitoring	App. 70

4 PROPERTY DESCRIPTION

The Troutman chamber was a sidewalk vault, accessed by a metal plate hatch, which has seen been filled in, as explained in Section 10. It was located in a mixed commercial and residential area of Bushwick, Brooklyn, approximately 0.5 miles from Newtown Creek. The chamber was underneath the center of the sidewalk, approximately five feet from a large three-story apartment building. The metering chamber was a small square shaped concrete vault roughly eight feet by eight feet. The concrete floor of the chamber was roughly ten feet below the sidewalk surface. Drainage was through a weep hole in the concrete floor. A ceramic pipe funneled any water in the chamber into the soils underneath the concrete vault.

This metering chamber was constructed specifically for monitoring water pressure and flow on the single nearby water main. The meter was constructed of cast iron and stood about five feet tall. The top held the actual metering gauges, the center of the column held a reservoir of elemental mercury, and the bottom was a solid metal base. A spill of elemental mercury was reported to DEC in 2006 during DEP's decommissioning of the chamber.

5 CURRENT SITE USE

After spill closure was granted by DEC in June 2006, DEP completely closed the chamber. The metering equipment was removed during decommissioning and concrete floor was demolished during remediation. After the spill was closed, clean backfill was used to fill in the chamber, bringing it to grade. The sidewalk hatchway was removed and the area cemented over.

6 SITE USE HISTORY

This vault was originally constructed and used to house metering equipment to monitor the flow rates and pressure within water supply mains. Before DEP began decommissioning the facility, the chamber had been inactive for decades. DEP estimates that the chamber was constructed in the 1940's and was taken out of service in the 1970's.

7 CURRENT AND HISTORICAL AREAS OF CONCERN AND COPCS

- **Uplands –**

Reviewed records did not indicate upland areas of concern.

- **Overwater Activities** ☐ Yes ☒ No

This site is not adjacent to Newtown Creek or associated waterways; therefore, this pathway is not present.

- **Spills -**

Documented spills at the site are summarized as follows:

On January 31, 2006, during the decommissioning of former water flow metering equipment, elemental mercury was released into the chamber as the meter was being dismantled (NYSDEC Spill No. #05-12607). There was no other equipment in the chamber there that could have released a constituent of concern other than the mercury metering equipment. The resulting investigation and remedial activities are described in sections 9.1 and 10.

8 PHYSICAL SITE SETTING

No site specific geologic or hydrogeologic information is available for the site. The following information is based on regional conditions in the Brooklyn/Queens area.

In general, the geologic setting of Newtown Creek area consists of Quaternary glacial deposits overlying Paleozoic gneiss and schist bedrock (Misut and Monti 1999). The contact between the glacial deposits and bedrock slopes rather steeply to the southeast, ranging in depth from less than 50 ft bgs near the mouth of Newtown Creek to over 200 ft bgs at the eastern portions of the historical data review area. The near surface geology is of most interest relative to potential groundwater transport pathways from upland sites to the creek. In most areas, a heterogeneous anthropogenic fill unit of variable thickness (generally less than 20 ft thick) immediately underlies the surface. Beneath the fill in most areas are complex upper glacial deposits of Late Pleistocene age consisting of ablation till, outwash, and glaciolacustrine sediments. In some areas near Newtown Creek, a shell-bearing gray silt unit is present beneath the fill; this silt may represent post-glacial intertidal sediments deposited in wetlands adjacent to the creek prior to filling in the 1800s. An extensive sequence of regionally significant glacial units underlies the upper glacial deposits in areas where bedrock is deeper (Misut and Monti 1999).

The surface aquifer is typically contained within the upper glacial deposits and the lower portion of the anthropogenic fill layer. Depth to groundwater varies from a few feet to about 30 ft bgs in the historical data review area. Shallow groundwater generally flows towards and discharges to Newtown Creek (Misut and Monti 1999).

9 NATURE AND EXTENT (CURRENT UNDERSTANDING OF ENVIRONMENTAL CONDITIONS)

9.1 Soil

- **Soil Investigations** × Yes ☐ No

The soils under the vault concrete floor that were directly impacted were light sandy soil, not native. This fill was the base fill used during construction of the chamber. These soils directly under the metering chamber demonstrated mercury contamination at levels up to 8700 ppm. As remedial excavation continued, it became clear the mercury was localized in the substrate. The mercury levels dropped significantly with three feet of excavation, conducted in rounds of one and a half feet. Results from the initial sample area were down to 8.28 ppm within the two remedial excavation rounds. Remedial excavation was continued from the initial notification on Jan 31, 2006 through April 2006. Each phase was conducted in the same manner: controlled excavation with soil endpoint grab samples collected. Soil was analyzed for total mercury concentration. Based on the very limited equipment and past usage of the facility, the elemental mercury used in the meters was the only constituent of concern.

The first two rounds of excavation were through the facility drainage weep hole. After the second round of excavation, the soil excavation was expanded. The concrete floor was broken out so excavation of the soils underneath the chamber could be achieved. The sampling results are summarized below.

LOCATION	Troutman Soil Analytical			
	2-13-06	3-20-06	3-30-06	4-28-06
Drain	4,300 mg/Kg	8,700 mg/Kg	-	-
North Wall	-	-	0.230 mg/Kg	Non-detect
East Wall	-	-	12.4 mg/Kg	1.56 mg/Kg
West Wall	-	-	Non-detect	0.113 mg/Kg
South Wall	-	-	90.7 mg/Kg	8.28 mg/Kg
Center Floor	-	-	0.415 mg/Kg	0.401

- **Bank Samples** ☐ Yes ☒ No
- **Soil Summary** -
This pathway is historically complete.

9.2 Groundwater

- **Groundwater Investigations** ☐ Yes ☒ No
No groundwater investigations have been conducted at this site.
- **NAPL Presence (Historical & Current)** ☐ Yes ☒ No
- **Dissolved COPC Plumes** ☐ Yes ☒ No
- **Groundwater Summary**

All drainage at the site was through the floor to the soils underneath. The heaviest mercury concentrations were noted immediately adjacent to the drain and dropped off quickly, suggesting limited migration through the sandy fill soils surrounding the original drain. Groundwater was not encountered during remedial work; groundwater levels were recorded as below remedial investigation horizons. While it is unlikely that groundwater is a complete pathway, there is not enough information make this conclusion.

9.3 Surface Water

- **Surface Water Investigation** ☐ Yes ☒ No
Not applicable.
- **SPDES Permit (Current or Past)** ☐ Yes ☒ No
- **Industrial Waste Discharge Permit (Current or Past)** ☐ Yes ☒ No
- **Stormwater Data** ☐ Yes ☒ No
- **Catch Basin Solids Data** ☐ Yes ☒ No
- **Wastewater Permit** ☐ Yes ☒ No
- **Wastewater Data** ☐ Yes ☒ No
- **Surface Water Summary** –

This pathway is not present, as the site was a below grade chamber with no runoff or wastewater systems.

9.4 Sediment

- **Creek Sediment Data** ☐ Yes ☐ No ☒ Not Applicable
- **Sediment Summary** - NA

9.5 Air

- **Air Permit** ☐ Yes ☒ No
- **Air Data** ☐ Yes ☒ No
- **Air Summary** - NA

10 REMEDIATION HISTORY (INTERIM REMEDIAL MEASURES AND OTHER CLEANUPS)

- **Soil Cleanup**

Remedial work at the chamber began on January 31, 2006 and continued through June 2006. The work progressed from removal of the debris and metering equipment remaining in the chamber to addressing the impacted soils within and underneath the chamber. The remedial excavation work was completed when DEC concurred that the TAGM soil guidance levels were met or the remediation had achieved the lowest levels achievable without jeopardizing the nearby building. Additional remediation would have required excavating towards the adjacent residential building, which was deemed a possible danger to the foundation and chamber structure. On March 24th, 2006, Hiralkumar Patel of NYSDEC Region 2 Division of Environmental Remediation met with DEP to inspect the site and review the on-going remediation.

After approval from DEC, closure of the chamber was accomplished by backfilling the chamber and concreting of the sidewalk access plate. Per DEC's direction, no further tests were conducted.

- **Groundwater Cleanup** - NA
- **Other** - NA

11 BIBLIOGRAPHY / INFORMATION SOURCES

- Project-Specific References

Analytical data for remedial work associated with NYS DEC Spill #05-12607—See attached.

NYSDEC, 1994a. NYSDEC Initial Spill Response Form No. 9406807. [NEWT-0018912]

Misut, P.E., and Monti, J. Jr. 1999. Simulation of Ground-Water Flow and Pumpage in Kings and Queens Counties, Long Island, New York. U.S. Geological Survey, Water-Resources Investigations Report 98-4071.

12 ATTACHMENTS

Figures:

Tables: Results for Mercury

LOCATION	Troutman Soil Analytical			
	2-13-06	3-20-06	3-30-06	4-28-06
Drain	4300 mg/Kg	8700 mg/Kg	-	-

North Wall	-	-	0.230 mg/Kg	Non-detect
East Wall	-	-	12.4 mg/Kg	1.56 mg/Kg
West Wall	-	-	Non-detect	0.113 mg/Kg
South Wall	-	-	90.7 mg/Kg	8.28 mg/Kg
Center Floor	-	-	0.415 mg/Kg	0.401

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Table 1
Potential Areas of Concern and Transport Pathways Assessment – XYZ Site

Potential Areas of Concern	Media Impacted					COPCs															Potential Historic or Current Complete Pathway				
	Surface Soil	Subsurface Soil	Groundwater	Catch Basin Solids	River Sediment	TPH			VOCs			SVOCs	PAHs	Phthalates	Phenolics	Metals	PCBs	Herbicides and Pesticides	Dioxins/Furans	Overland Transport	Groundwater	Direct Discharge – Overwater	Direct Discharge – Storm/Wastewater	Discharge to Sewer/CSO	Bank Erosion
						Gasoline-Range	Diesel – Range	Heavier – Range	Petroleum Related (e.g., BTEX)	VOCs	Chlorinated VOCs														
Description of Areas of Concern																									
Mercury Spill in an underground flow chamber	--	x	?	--	--	--	--	--	--	--	--	--	--	--	--	x	--	--	--	--	?	--	--	--	--

Notes:

√ - COPCs are/were present in Areas of Concern having a current or historical pathway that is determined to be complete or potentially complete

? - There is not enough information to determine if COPC is/was present in Area of Concern or if pathway is complete

-- - Current or historical pathway has been investigated and shown to be not present or incomplete

COPCs – Constituents of Potential Concern

BTEX - Benzene, toluene, ethylbenzene, and xylenes

PAHs - Polycyclic aromatic hydrocarbons

SVOCs - Semi-volatile Organic Compounds

TPH - Total Petroleum Hydrocarbons

VOCs - Volatile Organic Compounds